REMARKS

Entry of this amendment, reconsideration, and allowance are respectfully requested.

The specification is objected to noting a typographical error on page 8, line 3. The correction suggested by the Examiner is adopted in this amendment. Withdrawal of the objection is requested.

Claim 1 stands rejected under 35 U.S.C. §112, first paragraph. The term "active" is removed rendering this rejection moot. Withdrawal of the rejection is requested.

Claims 1, 7, and 8 stand rejected under 35 U.S.C. §103 as allegedly being unpatentable based on Falk in view of Proctor. The subject matter of claims 2 and 6 is incorporated into claim 1 rendering this rejection moot. Withdrawal of the rejection is requested.

Claims 2-6 and 9 stand rejected under 35 U.S.C. §103 as allegedly being unpatentable based on Falk in view of Proctor and further in view of Derneryd. This rejection is respectfully traversed.

Derneryd teaches "[t]he element spacing is primarily governed by scanning in a horizontal direction. In a triangular element grid the individual element spacing in a vertical direction is increased to an order of a wavelength ($d_y \approx \lambda$) without generating grating lobes in visible space for the obtained main lobe, and maintaining about half a wavelength spacing in a horizontal direction ($d_x \approx 0.48\lambda$)." See Abstract. The Examiner focuses on the element spacing in a vertical direction, but claim 1 recites that "said transmitting array columns are formed with a given distance between each one of the transmitting radiator elements, and a distance between each transmitting array column in the array antenna is one wavelength of the transmitting frequency" and that "said receiving array columns are formed with a given distance between

each one of the receiving radiator elements, and a distance between each receiving array column in the array antenna is one wavelength of the receiving frequency." Derneryd teaches that the element spacing is about half of a wavelength spacing in the horizontal direction, which is not one wavelength. If the scan direction in Derneryd were rotated by ninety degrees, then the element spacing would still be about half of a wavelength spacing in the vertical direction.

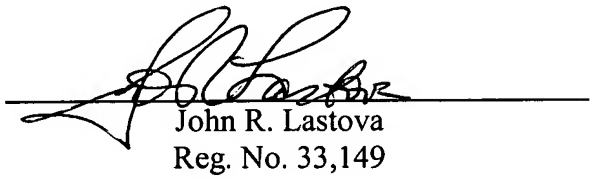
Claim 1 also recites "wherein the sparse array antenna includes a main radiation lobe and is arranged to be scannable to reduce sidelobes entering visual space when scanning the main radiation lobe from an off boresight direction." Thus, the claimed array antenna is not limited to performing scanning in only one dimension but may be used for different scan angles. See the non-limiting examples in Figures 11-13 which show scan angles of 0, 10, and 20 degrees. A significant benefit of the sparse antenna array in claim 1 is the reduction of sidelobes entering visual space when scanning the main radiation lobe from an off boresight direction. This benefit is achieved by the claimed column spacing and by having the "receiving radiator elements in the receiving array columns operate as parasitic elements in a transmit mode and transmitting radiator elements in the transmitting array columns operate as parasitic elements in a receive mode to reduce creation of grating lobes."

New dependent claim 10 further distinguishes from Derneryd which employs an equilateral triangular element grid by reciting: "wherein said wave-guides are arranged symmetrically about a line that extends through a center of each wave-guide."

The application is in condition for allowance. An early notice to that effect is requested.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: 
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